1951 ANNUAL INDEX

Volume 23

January to December

Author Index

Amos, Stephen E.—"Web Guiding Control," Sept., 159
Ani, Maurice—"Designing a Shockproof Table," Nov., 134
Austin, C. R.
"Section Thickness in Meehanite Castings," Feb., 130
"Selection of Gear Materials," Mar., 157

Barish, Thomas—"Splined Positive Lock," Jan., 115
Barry, J. J.—"Hardfacing—a Design Tool," Mar., 114
Bernhard, R. K.—"Simplified Balancing Machine," Sept., 133
Bibbero, Robert J. and Edward B. Chester—"How Plastics Aid Miniaturization," Oct., 127
Bixby, Joanne T.—"How Tests Can Improve Selection of Engineers," Nov., 111
Blaney, R. E.—"Mill Corrects Helix Pitch," July, 123
Bolz, Roger W.
"Engineering For Producibility," Aug., 133
"Production Processes: Heat Treating," Oct., 98
Botstiber, Dietrich W.—"Helicopter Drives," Apr., 185
Boyden, R. E. and K. F. Oldenburg—"Designing for Speed in Adding Machines," June, 110
Burgess, C. O.—"Joining Cast Iron," Mar., 129

Callaway, D. B.—"Reducing Noise in Machines," Dec., 122
Campbell, J. Alan
"Pneumatic Power
General Considerations," Apr., 175
Design of Air Supply Systems," May, 141
Selection of Components," July, 149
Carmichael, Colin—"Torque Converter Transmission," Feb., 163
Casey, Robert T.—"Engineering Good Patents," Feb., 125
Cassey, T. E. and J. W. Sawyer—"Surface Finish Standards," May, 137
Chaffee, Randolph W.—"Evaluating Engineers," June, 141
Chester, Edward B. and Robert J. Bibbero—"How Plastics Aid Miniaturization," Oct., 127
Clipsham, George F.—"Reducing Costs of Machine Parts," May, 147
Conway, H. D.
"Analyzing Stress and Deflection of Thin Plates," (Data Sheet), Sept., 163
"Graphical Analysis of Axially End-Loaded Beams," Jan., 137
Conway, H. G.—"Let's Rationalize the Inch," Sept., 123
Crede, Charles E.—"How to Evaluate Shock Tests," Dec., 149
Crede, Charles E. and Miguel C. Junger—"Designing for Shock Resistance—Part 2," Jan., 131

Davis, Louis E.—"Selecting Manual Controls," Nov., 123
De Jonge, A. E. Richard—"Are the Russians Ahead in Mechanism Design," Sept., 127
Delmonte, John—"Adhesives in Machine Design," Nov., 96
Drewitz, Edwin—"Stamped Switch Mechanism," Feb., 137
Durham, Harold M.—"Designing Spur and Helical Gears for Durability," (Data Sheet), Jan., 149
Durelli, A. J., R. L. Lake, and E. A. Phillips—"Design Factors for Stress Concentration," (Data Sheet), Dec., 165

Ernst, Hans—"Automatic Precision Balancing," Jan., 107

Ferar, Montgomery and Carl W. Sundberg—"How Redesign Improves Appearance, Reduces Cost," Mar., 152

Gagne, A. F. Jr.—"Organizing an Engineering Data File," Sept., 110
Giel, George J.—"Mechanical or Electronic Design?" Feb., 118
Gillett, H. W.
"Mechanical Properties of Metals," Mar., 143
"Selection of Materials," May, 154
Graham, L. A.—"A New Approach to Production Winding," Apr., 153
Gray, Albert Woodruff
"Secrecy or Patent?," Dec., 119
"Shop Right in Inventions," Sept., 121
Grodzinski, Paul
"European Design Trends," Nov., 129
"European Machine Design," Feb., 146
"Straight-Line Motion Produced by Simple Mechanisms," June, 125
Guins, Sergei G.—"Strain Gages in Design," Jan., 145
Gutman, Alfred S.—"Cam Dynamics," Mar., 149

Hannula, Fred W.—"Noncircular Surfaces," July, 111
Hilficker, Edward G.—"How To Lay Out Centrifugal Pump Volute Castings," Aug., 129
Howarth, H. A. S.—"Proposed Standards for Pivoted Shoe Thrust Bearings," May, 150
Howe, Richard J. and Emory N. Kemler—"Mechanism Design," Sept., 148

1951 ANNUAL INDEX

Volume 23

January to December

Author Index

Amos, Stephen E.—"Web Guiding Control," Sept., 159
Ani, Maurice—"Designing a Shockproof Table," Nov., 134
Austin, C. R.
"Section Thickness in Meehanite Castings," Feb., 130
"Selection of Gear Materials," Mar., 157

Barish, Thomas—"Splined Positive Lock," Jan., 115
Barry, J. J.—"Hardfacing—a Design Tool," Mar., 114
Bernhard, R. K.—"Simplified Balancing Machine," Sept., 133
Bibbero, Robert J. and Edward B. Chester—"How Plastics Aid Miniaturization," Oct., 127
Bixby, Joanne T.—"How Tests Can Improve Selection of Engineers," Nov., 111
Blaney, R. E.—"Mill Corrects Helix Pitch," July, 123
Bolz, Roger W.
"Engineering For Producibility," Aug., 133
"Production Processes: Heat Treating," Oct., 98
Botstiber, Dietrich W.—"Helicopter Drives," Apr., 185
Boyden, R. E. and K. F. Oldenburg—"Designing for Speed in Adding Machines," June, 110
Burgess, C. O.—"Joining Cast Iron," Mar., 129

Callaway, D. B.—"Reducing Noise in Machines," Dec., 122
Campbell, J. Alan
"Pneumatic Power
General Considerations," Apr., 175
Design of Air Supply Systems," May, 141
Selection of Components," July, 149
Carmichael, Colin—"Torque Converter Transmission," Feb., 163
Casey, Robert T.—"Engineering Good Patents," Feb., 125
Cassey, T. E. and J. W. Sawyer—"Surface Finish Standards," May, 137
Chaffee, Randolph W.—"Evaluating Engineers," June, 141
Chester, Edward B. and Robert J. Bibbero—"How Plastics Aid Miniaturization," Oct., 127
Clipsham, George F.—"Reducing Costs of Machine Parts," May, 147
Conway, H. D.
"Analyzing Stress and Deflection of Thin Plates," (Data Sheet), Sept., 163
"Graphical Analysis of Axially End-Loaded Beams," Jan., 137
Conway, H. G.—"Let's Rationalize the Inch," Sept., 123
Crede, Charles E.—"How to Evaluate Shock Tests," Dec., 149
Crede, Charles E. and Miguel C. Junger—"Designing for Shock Resistance—Part 2," Jan., 131

Davis, Louis E.—"Selecting Manual Controls," Nov., 123
De Jonge, A. E. Richard—"Are the Russians Ahead in Mechanism Design," Sept., 127
Delmonte, John—"Adhesives in Machine Design," Nov., 96
Drewitz, Edwin—"Stamped Switch Mechanism," Feb., 137
Durham, Harold M.—"Designing Spur and Helical Gears for Durability," (Data Sheet), Jan., 149
Durelli, A. J., R. L. Lake, and E. A. Phillips—"Design Factors for Stress Concentration," (Data Sheet), Dec., 165

Ernst, Hans—"Automatic Precision Balancing," Jan., 107

Ferar, Montgomery and Carl W. Sundberg—"How Redesign Improves Appearance, Reduces Cost," Mar., 152

Gagne, A. F. Jr.—"Organizing an Engineering Data File," Sept., 110
Giel, George J.—"Mechanical or Electronic Design?" Feb., 118
Gillett, H. W.
"Mechanical Properties of Metals," Mar., 143
"Selection of Materials," May, 154
Graham, L. A.—"A New Approach to Production Winding," Apr., 153
Gray, Albert Woodruff
"Secrecy or Patent?," Dec., 119
"Shop Right in Inventions," Sept., 121
Grodzinski, Paul
"European Design Trends," Nov., 129
"European Machine Design," Feb., 146
"Straight-Line Motion Produced by Simple Mechanisms," June, 125
Guins, Sergei G.—"Strain Gages in Design," Jan., 145
Gutman, Alfred S.—"Cam Dynamics," Mar., 149

Hannula, Fred W.—"Noncircular Surfaces," July, 111
Hilficker, Edward G.—"How To Lay Out Centrifugal Pump Volute Castings," Aug., 129
Howarth, H. A. S.—"Proposed Standards for Pivoted Shoe Thrust Bearings," May, 150
Howe, Richard J. and Emory N. Kemler—"Mechanism Design," Sept., 148

Ikola, George H.—"Design of Aircraft Loading Ramps," July, 100

Junger, Miguel C. and Charles E. Crede—"Designing for Shock Resistance—Part 2," Jan., 131

Keas, Carl F.—"Design Modification or New Machine," Mar., 106
Kemler, Emory N. and Richard J. Howe—"Mechanism Design," Sept., 148
Koch, G. H.—"Designing an Electrical Appliance To Utilize Diecastings," May, 127
Kraus, Charles E.—"Elements of Automatic Handling," Nov., 142
Kremer, John—"Milestones in Design: The Motion Picture," Feb., 154
Krouse, Roy—"Ball Bearing Geometry," Feb., 158
Kuhn, E. W.—"Complex Motion—for Selector Mechanism," July, 133
Kulze, Leonard—"Designing Wave Springs," July, 109

Lake, R. L., A. J. Durelli, and E. A. Phillips—"Design Factors for Stress Concentration," (Data Sheet), Dec., 165
Landvater, J. H. and J. E. Petersen—"Nomograms Aid Selection of Tap-Drill Size," (Data Sheet), Nov., 149
Levin, Carl G.—"Powder Metal Gears," Aug., 117
Lichtwitz, Otto—"Mechanisms for Intermittent Motion—Part 1," Dec., 134
Linderoth, L. Sigfred Jr.—"Calculating Cam Profiles," July, 115
Lloyd, T. C.—"Specifying Standard Parts," May, 106
Logan, George H.—"Powder-Metal Parts," Oct., 133

Mathi, Walter E.—"Reducing Costs—Through Design Simplification," Dec., 110
Meyers, O. G.—"Working Stresses for Helical Springs," Nov., 135
Mills, Kenneth N.—"Gears—Improving Resistance to Service Damage," May, 116
Mills, Kenneth N.—"Double Breather Eliminates Condensation Problems," Nov., 147
Minech, W. T.—"Design for Economy," Mar., 139
Moody, John L.—"Designing a Motor for High Production," June, 139
Murray, Arthur F.—"Redesign to Simplify Tooling," Sept., 153

Nash, William A.—"Calculating Deflections in Circular Plates," July, 145
Nickson, Philip T., Eugene W. Pike and Thomas R. Silverberg—"Linkage Layout," Nov., 105

Oldenburg, K. F. and R. E. Boyden—"Designing for Speed in Adding Machines," June, 110
Ordas, A. F.—"How To Measure WR^2 of Balanced Rotors," Nov., 127
Orton, R. E.
"Applying Torque Converters to Crane Drives:
Drive Requirements," June, 119
Converter Principles," July, 138
Drive Characteristics," Aug., 113

Patzer, W. A.—"Coin-Operated Controls," Feb., 141
Pelphrey, Harry—"Gear Tooth Relieving," Sept., 143
Petersen, J. E. and J. H. Landvater—"Nomograms Aid Selection of Tap-Drill Size," (Data Sheet), Nov., 149
Peterson, R. E.
"Design Factors for Stress Concentration (Data Sheet):
Notches and Grooves in Bending," Feb., 169
Notches and Grooves in Tension and Torsion," Mar., 161
Fillets in Bending," May, 159
Fillets in Tension and Torsion," June, 173
Transverse Holes in Bars and Shafts," July, 155
Phillips, E. A., A. J. Durelli, and R. L. Lake—"Design Factors for Stress Concentration," (Data Sheet), Dec., 165
Pike, Eugene W., Thomas R. Silverberg and Philip T. Nickson—"Linkage Layout," Nov., 105
Ponstingl, John C.—"Timing Relays—Selection and Application," Apr., 131

Rabinow, J.—"Developing Seals for Abrasive-Fluid Mixtures," June, 128
Raiklen, Harold—"Dynamic Response of Hydraulic Systems," Sept., 137
Richards, John T.—"Designing Beryllium Copper Investment Castings," May, 121
Ring, Wayne A.—"Determining Practical Tolerances," Mar., 121
Ring, Wayne A. and Edward C. Varnum—"Chi-Square Test—Checks Machine Performance," Nov., 115
Rogers, W. L.—"Designing a JATO Engine," Jan., 102
Rosenblatt, Philip—"Vacuum Metallizing," Oct., 141
Rumsey, R. Douglas—"Redesigned for Higher Speed," Apr., 123
Rylander, H. Grady—"Eliminating Friction from Torque Measurements," Dec., 161

Sawyer, J. W. and T. E. Cassey—"Surface Finish Standards," May, 137
Sawyer, J. W. and H. J. Stark—"Laminated Molded Plastics," July, 120
Schorsch, C. J.—"Surface Compressive Stress in Gear Teeth," (Data Sheet), Dec., 163
Sebring, Paul B.—"Proportionalizing Dither," Aug., 125
Shafer, Richard E.—"Calculating Air Pressure Drop of Heat Exchangers," Aug., 124
Shepherd, E. Colston—"Vibration Failures," Dec., 157
Silverberg, Thomas R., Eugene W. Pike and Philip T. Nickerson—"Linkage Layout," Nov., 105
Sloan, J. J.—"Push-Pull and Torque Tubes," Apr., 143
Soong, William E.
"Designing an Integral Dashpot," July, 129
"Designing Hydraulic Dampers," Aug., 109
Stark, H. J. and J. W. Sawyer—"Laminated Molded Plastics," July, 120
Stone, Melvin—"Designing Aircraft Main Spar Frames," Oct. 111
Sundberg, Carl W. and Montgomery Ferar—"How Redesign Improves Appearance, Reduces Cost," Mar., 152
Sved, G.—"Nomogram Simplifies Worm and Gear Design," (Data Sheet), Aug., 157

Thearle, Ernest L.—"A Nonreversing Coupling," Apr., 181
Thoen, Richard L.—"Gear Eccentricity," Sept., 155
Thompson, Lincoln—"Dictating Machines," Jan., 90
Tuplin, W. A.—"What Helix Angle—for Helical Gears," Apr., 173
Tyler, Ransom—"Protecting Hydraulic Circuits Against Fire Hazards," Sept., 141

Van Hamersveld, John
"Cost Control Engineering:
Organization and Functions," Feb., 108
Cost and Design Data," Mar., 132
Varnum, Edward C.—"Three-Relay Circuits," Feb., 121
Varnum, Edward C. and Wayne A. Ring—"Chi-Square Test—Checks Machine Performance," Nov., 115

Wallace, J. M.—"Designing a New Machine," Aug., 102
Watt, John R.—"Choosing the Right Low-Temperature Metals," Oct., 117
Wilson, Warren E.—"Designing A Vane Pump," Apr., 157
Woodhouse, Harold—"Turbine Blade Fastenings," Feb., 148

Subject Index

A

Accelerator, tests aircraft components*, Aug., 120
Accelerometers
compressional (Gulton Mfg. Corp.)*, Apr., 226
magnetic recording (Engineering Research Associates Inc.)*, Apr., 226
Actuators
linear (Electrical Eng. & Mfg. Corp.)*, Jan., 158
rotary, reversing (Electrical Eng. & Mfg. Corp.)*, Feb., 180
Adding machines, designing for speed, June, 110
Adhesives, bonded assemblies, Nov., 96
Afterburner, jet-engine*, June, 127
Air conditioner, automatic humidity control for*, June, 133
Aircraft
development of a large, May, 165
loading ramps, July, 100
nuclear propulsion, Dec., 222
spar frames, Oct., 111
Aluminum alloys, Oct., 311
Amplifiers
carrier-wave (Consolidated Engineering Corp.)*, Feb., 184
servo (Servomechanisms Inc.)*, Apr., 219
Arctic service, designing construction equipment for*, Feb., 204
Assemblies, adhesive-bonded, Nov., 96
Automotive parts, stress in, June, 233

B

Balancers
simplified, designing, Sept., 133
three-ball, design of, Jan., 107
Balls, nylon plastic (Ace Plastic Co.)*, Apr., 208
Base, tilting motor (Lovejoy Flexible Coupling Co.)*, Mar., 174
Beams, end-loaded, graphical analysis, Jan., 137
Bearing surfaces, phenolic for millers*, June, 118
Bearings, ball
double-curvature deep-groove, Feb., 158
miniature (Miniature Precision Bearings Inc.)*, Aug., 183
miniature (New Hampshire Ball Bearings Inc.)*, Oct., 147
pillow-block (Boston Gear Works)*, Feb., 180
sealed (Landis & Gyr Inc.)*, Mar., 176
Bearings, roller, expansible*, Apr., 248

* Denotes short articles of less than one page.

Bearings, sleeve
bronze (Bronze Bearings Inc.)*, July, 173
graphited bronze (Bronze Bearings Inc.)*, Sept., 169
nylon-lined (Thomson Industries Inc.)*, Nov., 159
porous bronze (Boston Gear Works)*, Oct., 151
steel-backed (Beauideal Inc.)*, Aug., 172
Bearings, spindle, air lubrication*, June, 210
Bearings, tnrust
pivoted-shoe*, Oct., 174
pivoted-shoe, standards, May, 150
Bellows
metal (Titeflex Inc.)*, June, 186
stainless-steel (Clifford Mfg. Co.)*, Jan., 157
Belt
conveyor, neoprene (Baldwin Belting Inc.)*, Dec., 184
transmission (Chas. H. Schierin Co.)*, Feb., 178
transmission, hollow-centered V*, Oct., 176
transmission, leather V (Graton & Knight Co.)*, Oct., 148
transmission, rubber-tooth, Apr., 161
transmission, timing (L. H. Gilmer Div., U. S. Rubber)*, Apr., 216
Beryllium-copper
alloys, Oct., 316
investment castings, May, 121
Block, pillow (Boston Gear Works)*, Feb., 180
Blower, steel works*, Apr., 184
Board, drawing, portable (A. Partrick Co.)*, Feb., 184
Boilers
reheat, steam-generating*, Nov., 117
steam, electric (Livingstone Engineering Co.)*, Sept., 172
steam, miniature (Palo Laboratory Supplies Inc.)*, Sept., 186
Boring machine, with long feed*, June, 135
Brakes
centrifugal clutch used as*, Apr., 149
controls paper rolls*, Apr., 149
disk, fluid-pressure*, Aug., 196
eddy-current*, Jan., 172
electric, for cloth brusher*, Aug., 123
four-way, controls recorder*, July, 125
mechanical load (Downs Crane & Hoist Co.)*, May, 170
self-energizing disk*, Jan., 175
Brass alloy, bright (American Brass Co.)*, July, 170
Breather, double, eliminates condensation in gear cases, Nov., 147
Broaching-milling machine, combination*, June, 134
Brushes, motor, sandwich (Pure Carbon Co. Inc.)*, July, 163
Bucket, turbine, fastenings, Feb., 148

C

Cabinets, radio, styling*, Dec., 117
Calculating machine, design of, Dec., 110
Cameras
correlates data with mechanism position*, Nov., 102
electrically tripped, Feb., 136
recording (Flight Research Engineering Corp.)*, Feb., 184
Calculator, statistical (Graphic Calculator Co.)*, July, 176
Cams
corrective, applied to linkages, Nov., 105
dynamics, profile design, Mar., 149
noncircular rolling, designing, July, 111
profiles, calculating, July, 115
Capacitors
ceramic cup (Herlec Corp.)*, Aug., 174
fluid-immersed*, Feb., 115
paper-dielectric (General Electric Co.)*, Aug., 180
subminiature (Sprague Electric Co.)*, May, 172
tantalum (Fansteel Metallurgical Corp.)*, May, 176
Car, mine shuttle, has increased maneuverability*, Nov., 122
Carbides, cemented, Oct., 324
Carriers, conveyor belt (Stephens-Adamson Mfg. Co.)*, Dec., 176
Casings, centrifugal pump volute, layout, Aug., 129
Casters
pneumatic tire (Aerol Co.)*, Apr., 224
solid-tread (Aerol Co.)*, May, 176
Castings
centrifugal, steel, Oct., 310
die, used in fan, May, 127
investment, beryllium copper, May, 121
investment, designing for, Jan., 154
iron, welded with nickel-base electrodes, Mar., 129
sand, design, Oct., 190
section thickness in Meehanite, Feb., 130
shell-mold*, Dec., 238
Cast-weld design, Oct., 137
Ceramics
high-temperature (Stupakoff Ceramic & Mfg. Co.)*, Oct., 150
metal compositions*, Oct., 329
recent developments, Oct., 327
Chain
conveyor, flat-top (Chain Belt Co.)*, Oct., 147
transmission, dynamic loading, Apr., 250
Chronograph, computes own corrections*, May, 113
Circuits
control, with selenium rectifiers, Apr., 163
electric, stamped, for telephone*, May, 132
machine control, timing relays for, Apr., 131
three-relay electronic, Feb., 121
Clamps
hose (Ideal Corp.)*, June, 190
wire-harness (Tinnerman Products Inc.)*, Nov., 159
Clarifier, coolant (Honan-Crane Corp.)*, Apr., 216
Cleaner, vacuum, swivel-top*, Oct., 125
Clutches
air, accelerates paper reel*, Apr., 151
automotive*, Feb., 190
brake, magnetic*, Aug., 194
crystal*, Dec., 116
dry disk (Auto Specialties Mfg. Co.)*, June, 182
eddy-current, controls automatic turret feed*, Nov., 103
engagement synchronized in two directions*, Nov., 184
friction disk (Edgemont Machine Co.)*, Mar., 180
friction, inertia-locked*, Oct., 172
magnetic fluid, shaft seals for, June, 128
overload (Flaton Machine Works)*, July, 174
overload-release*, Jan., 172
overrunning*, July, 194
press, doubles as brake*, Mar., 126
rotary impact*, Jan., 176
spring, two-way*, Apr., 197
transient friction conditions, Jan., 153
Coatings
ceramic*, Oct., 329
metallic, Oct., 348
metallic, vacuum-applied, Oct., 141
protective (American Sand-Banum Co.)*, Apr., 225
vinyl plastic (Casey & Case Coating Co.)*, Apr., 223
Cobalt-base alloys, Oct., 322
Coin controls for vending machines, Feb., 141
Collator*, Jan., 128
Collector, dust (Aget-Detroit Co.)*, Jan., 158
Composing machine, type, photographic*, Jan., 122, 126
Compressors
capacity control for*, Aug., 121
dry-air (Romec Div., Lear Inc.)*, Mar., 178
filtered-air (Romec Div., Lear Inc.)*, Jan., 162
free-piston diesel*, Jan., 121
pneumatic, in power systems, May, 141
Computer
electronic*, Jan., 114
time-cost (Willer Sales Co.)*, July, 176
Condensation, eliminating, in gear cases, Nov., 147
Connectors
hermetically sealed (Cannon Electric Development Co.)*, May, 176
wire, solderless (Buchanan Electrical Products Corp.)*, Aug., 174
wire, solderless (Ideal Industries Inc.)*, Apr., 222
Construction equipment, designing for arctic service*, Feb., 204
Contactors
multipole (Arrow-Hart & Hegeman Electric Co.)*, Jan., 160
magnetic (Essex Wire Corp.)*, Aug., 182
solenoid (Ward Leonard Electric Co.)*, Oct., 151
Control, quality, by determining tolerances, Mar., 121
Controls (see also specific type)
coin, for vending machines, Feb., 141
electric count (Counter and Control Corp.)*, Apr., 224
flow, pneumatic (Hagan Corp.)*, June, 184
fluid-level*, Feb., 116
hydraulic remote (Superdraulic Corp.)*, July, 170
logging winches, Apr., 193
machinery and drives, Apr., 121
manual, selecting, Nov., 123
pneumatic machine, Apr., 175
pneumatic, pressure or vacuum (Henry G. Dietz Co.)*, Apr., 214
positioning, for flame-cutting machine*, Nov., 118
press, photoelectrically controlled ram*, Sept., 119
programming, for IBM card punch*, July, 124
remote, for variable speed drive (Graham Transmissions Inc.)*, Nov., 162
shear, varies cut lengths, Apr., 162
systems, hydraulic, dynamic response, Sept., 137
temperature (Leeds & Northrop Co.)*, May, 178
temperature, thermocouple (Phen-Trols Inc.)*, Sept., 182
totalizer, mechanical (Hagan Corp.)*, Feb., 176
valve-actuating (Ledeen Mfg. Co.)*, June, 188
valve-positioning (Conoflow Corp.)*, Sept., 184
web-guiding*, May 113
web-guiding, photoelectric, Sept., 159
Conveyor, oscillating, for chips*, July, 106
Coolant system (Rockwell Mfg. Co.)*, Mar., 176
Copper alloys, Oct., 316
Corrosion-resistant alloys, Oct., 322
Counters
batch, mechanical (Production Instrument Co.)*, Dec., 178
electric-actuated (Production Instrument Co.)*, Feb., 182
electric, batch (Production Instrument Co.)*, June, 186
electric (Durant Mfg. Co.)*, Apr., 213
electronic, seven-digit (Berkeley Scientific Corp.)*, Sept., 182
impulse, step-motor (General Electric Co.)*, Dec. 176
mechanical, flexible-shaft (Production Instrument Co.)*, Mar., 180
nuclear radiation, design of, Feb., 118
Couplings
angular adjusting*, Aug., 192
cable-linked*, Apr., 195
centrifugal (Centric Clutch Co.)*, Jan., 165
cutout (Anchor Steel & Conveyor Co.)*, Jan., 164
double-cone*, Nov., 103
flexible disk, Dec., 168
flexible, fractional hp (Guardian Products Corp.)*, Dec., 182
flexible (Lord Mfg. Co.)*, Jan., 164
gear (Flexible Gear Coupling Co.)*, Mar., 174
mercury clutch (Automatic Steel Products Inc.)*, May, 174
moisture-tight*, July, 196
nonreversing for centrifugal pumps, design of, Apr., 181
torque-responsive*, Oct., 172
Cranes, torque converter applied to, June, 119, July, 138, Aug., 113
Crusher, cone, hydraulically adjusted*, Sept., 129
Cylinders, hydraulic
designing integral dashpots, July, 129
double-acting (Rivett Lathe & Grinder Inc.)*, June, 192
trunnion (Benjamin Lassman & Son)*, Mar., 180
Cylinders, pneumatic
counterbalance (Miller Motor Co.)*, Mar., 178
single-action (Bellows Co.)*, June, 182

D

Dampers, hydraulic, designing, Aug., 109
Dashpots, integral, for hydraulic cylinders, July, 129

* Denotes short articles of less than one page.

Deflections, in thin circular plates, July, 145
Dictating machines, design of, Jan., 90
Dimensions, rationalizing, Sept., 123
Dishwasher, water-jet cleaning, Feb., 135
Disks, timing, plastic (Allegheny Plastic Inc.)*, May, 180
Dispenser, tape, dial*, Sept., 132
Dither, proportionalizing, for hydraulic servo, Aug., 125
Drill, hand, has increased power*, May, 134
Drilling unit, floating-rotor*, Apr., 196
Drives (see also Transmissions)
  adjustable-speed (Baldor Electric Co.)*, Oct., 149
  adjustable-speed, dual-belt (U. S. Electrical Motors Inc.)*, May, 180
  amplidyne, for veneer lathe*, May, 153
  chain, heavy-duty high-speed, June, 137
  electromagnetic, for engine cooling fan*, Nov., 188
  fluid, one-way*, Jan., 175
  gantry crane*, Apr., 172
  Geneva, for bread wrapper, Apr., 123
  helicopter, types of, Apr., 185
  instrument, multispeed (Gorrell & Gorrell)*, Sept., 178
  machine, pneumatic, Apr., 175
  machinery and controls, Apr., 121
  paper and textile machinery, Apr., 148
  reduction, for ore bridge buckets*, Feb., 119
  variable-speed, for production winding, Apr., 153
  variable speed, rotating-test (Speed Selector Inc.)*, Dec., 184
  worm, flexible*, Oct., 108
Dryer, hair, plastics used in*, Sept., 130
Dynamometers
  magnetic coupling (Avion Instrument Corp.)*, Mar., 182
  tests friction materials*, Feb., 153

E

Electric accessories and controls, see Controls or specific type
Electric assemblies, miniaturizing with plastic embedment, Oct., 127
Electric circuits, three-relay, Feb., 121
Electric motors, see Motors
Electronic design versus mechanical, Feb., 118
Electronic equipment, temperature rise, Feb., 174
Enamel, porcelain, wear surface on valve plug*, Sept., 118
Engineering, see Management
Engineers (see also Personnel, Management)
  evaluating, June, 141
  improving selection with tests, Nov., 111
  utilization of, Oct., 197
  what industry expects, Sept., 217
Engines
  diesel (Lister-Blackstone Inc.)*, Apr., 224
  dividing, Swiss*, July 106
  ducted fan jet, Nov., 146
  helium, in research freezer, Mar., 172
  jet, afterburner*, June, 127
  stationary radial, design features of (Data Sheet) Mar., 166
  turboprop, develops high horsepower*, Oct., 182
Escalator, simplified design*, Nov., 133
Escapement, for timing relays*, May, 204
Evaporator, rotary-vane*, July, 107
Extrusion, propellers designed for, Nov., 139

F

Fabrics, industrial, Oct., 344
Fans
  designed to use diecastings, May, 127
  slide rule computer for (Trane Co.)*, Feb., 184
Fasteners
  anchor nut (Kaynar Mfg. Co.)*, Dec., 173
  bolt, self-locking (National Screw & Mfg. Co.)*, Nov., 160
  insert (Groov-Pin Corp.)*, Jan., 162
  locking (Shakeproof Inc.)*, Jan., 164
  locking, snap (American Shower Door Co.)*, Apr., 222
  locknut, nylon (Townsend Co.)*, June, 182
  nut, decorative retaining (Tinnerman Products Inc.)*, July, 164
  pin, dowel, locking (Driv-Lok Pin Co.)*, Nov., 164
  pin, two-piece (Cherry Rivet Co.)*, Dec., 182
  retainer, selflocking (Waldes Kohinoor Inc.)*, Sept., 176
  screw threads, nomograms for selection of tap-drill size (Data Sheet), Nov., 149
  thread insert (Heli-Coil Corp.)*, Aug., 180
Fatigue tests, on helical springs, Nov., 135
Feeder, parts (Syntron Co.)*, Mar., 173
Felt, adhesive (Products Research Co.)*, Sept., 185
Files, engineering data, organizing, Sept., 110
Fillets, stress concentration at (Data Sheet), May, 159, June, 173
Filters
  air and gas (Selas Corp. of America)*, Aug., 172
  gasoline, nonwoven cloth (Sparkler Mfg. Co.)*, Nov., 159
  glass-walled (Micro Metallic Corp.)*, Apr., 219
  hydraulic, radial-fin (Dollinger Corp.)*, May, 174
  pneumatic, automatic (Wilkerson Valve Inc.)*, May, 172
  pump, small-volume (Sethco)*, Oct., 156
Finish, surface, standards, May, 137
Finishes
  antirust, aluminum (Speco Inc.)*, Sept., 180
  antirust (Paint Corp. of America)*, Sept., 180
  chromate coating (Enthone Inc.)*, Sept., 180
  hot-spraying of*, Mar., 111
  metal primer (Kelite Products Inc.)*, June, 188
  plastic, transparent (Minnesota Mining & Mfg. Co.)*, Oct., 149
  protective, bright (Allied Research Products Inc.)*, June, 193
  synthetic, Oct., 350
Fire, protecting hydraulic systems against, Sept., 141
Fittings (see also Hose, Tubing)
  pipe, plastic (Carlon Products Corp.)*, Feb., 178
  plastic pipe reducers (Carlon Products Corp.)*, Apr., 208
  reducer, tubing (Crawford Fitting Co.)*, Dec., 178
Fixture, indexing, for gaging machines, Aug., 160
Fluid film strength*, Aug., 211
Fluid level control*, Feb., 116
Folder, automatic sheet*, Feb., 133
Forming machine, stretch-wrap*, Aug., 123
Frames, main spar, aircraft, designing, Oct., 111
Freezer, research, cooled by helium engines, Mar., 172
Friction
  eliminating in torque measurements, Dec., 161
  materials, Oct., 326
  under transient conditions, Jan., 153

G

Gages
  air, and control*, Oct., 109
  air, and control (Ateliers de Normandie)*, Aug., 182
  bore-measuring, electronic*, Dec., 131
  strain, bonded (Baldwin-Lima-Hamilton Corp.)*, Feb., 185, Aug., 184
  strain, mechanical (F. F. Metzger & Son)*, Oct., 158
  strain, unbonded resistance (Statham Laboratories Inc.)*, Dec., 186
  strain, used in test work, Jan., 145
  thickness, beta-ray*, Dec., 116
  vacuum (Hastings Instrument Co.)*, Mar., 183
  vacuum, thermopile (Hastings Instrument Co.)*, Nov., 171
Gaging machine, automatic, Aug., 160
Gaskets
  anticorrosive (Garlock Packing Co.)*, Mar., 173
  material, asbestos-neoprene (Rogers Corp.)*, Nov., 168
Gear cases, eliminating condensation with breather, Nov., 147
Gears
  eccentric, drive press bed*, Jan., 124
  eccentricity, effect on angular displacement, Sept., 155
  hobbed, helix angle for, Apr., 173
  improving resistance to service damage, May, 116
  materials, selection of, Mar., 157
  nylon, molded, Oct., 145
  powder-metal, Aug., 117, Oct., 146
  shot peening for fatigue resistance, June, 178
  spur (Boston Gear Works)*, May, 172
  spur and helical, wear resistance (Data Sheet), Jan., 149
  surface compressive stress (Data Sheet), Dec., 163
  tooth relieving, Sept., 143
  and worm design, nomogram (Data Sheet), Aug., 157
Gear-shaving machine, automatic transfer*, Dec., 117
Generators
  controlled by magnetic clutch, Mar., 138
  current supply, for aircraft engines, Mar., 114
  high-frequency (General Electric Co.)*, Feb., 176
  high-frequency (Kato Engineering Co.)*, Aug., 178
  tensions rolled paper sheet*, Apr., 151
Geneva drives
  controls camera*, July, 126
  design of, Dec., 134
  external (Geneva Machine & Tool Corp.)*, July, 172
  for bread wrapper, Apr., 121
Glass, Oct., 329
Glass-plastic laminates, molding, Dec., 154
Governor, spring centrifugal (Hoof Products Co.)*, Feb., 178
Grinder, finishes jet blades*, May, 136

H

Hardfacing, as a design tool, Mar., 114
Heaters
  electric, flat elements (Syntron Co.)*, Nov., 162
  induction, photoelectric control*, Dec., 118
Heat exchangers
  bonded-fin*, Jan., 101
  pressure drop in, Aug., 124
Heat treater, automatic cycle*, May, 133
Heat treating, Oct. 98
Helicopters, drives for, Apr., 185
Hobber, gear, hydraulic-feed, Oct., 122
Holes, stress concentration at, in bars and shafts (Data Sheet), July, 155
Honer, with controlled tool expansion, Oct., 126
Hoppers
  feeding chuting and orienting parts with, Nov., 142
  parts-handling (Syntron Co.)*, Mar., 173
Hose
  pipe-connector (Finn & Co.)*, Jan., 162
  metallic, coolant (Vermont Flexible Tubing Co.)*, Oct., 156
  nonmetallic, rubber (Mercer Rubber Co.)*, Dec., 180
  stainless-steel (Allied Metal Hose Co.)*, Feb., 178
Housings, laminated-molded, plastic, July, 121
Hub, fan, vibration isolating (Lord Mfg. Co.)*, Sept., 169
Humidity, relative, sensing elements*, Sept., 117
Hydraulics
  controls and equipment, see also Controls or specific type
  servo, proportionalizing dither increases sensitivity, Aug., 125
  systems, dynamic response in, Sept., 137
  systems, fire protection for, Sept., 141

I

Inductor, decade (Hycor Co.)*, Aug., 183
Instruments
  function-plotting (Monneapolis-Honeywell Regulator Co.)*, Aug., 184

* Denotes short articles of less than one page.

grease-testing, photographic*, Nov., 190
hardness testing (A. H. Co.)*, May, 182
insulation testing (James G. Biddle Co.)*, June, 194
leak-detection (Eastman Kodak Co.)*, May, 182
optical, for examining and photographing materials (F. T. Griswold Mfg. Co.)*, Nov., 172
pressure-measuring*, Jan., 100
pressure-measuring (Electro Products Laboratories)*, Sept., 186
quartz-orienting*, Nov., 121
strain-analyzing (Electronic Tube Corp.)*, May, 182
tension and load-indicating (W. C. Dillon Co.)*, Nov., 172
thermal testing (George L. Nankervis Co.)*, Mar., 182
time-interval measuring (American Chronoscope Corp.)*, Mar., 182
torque, for tapping operations*, May, 131
torque-measuring, for control shafts*, Nov., 186
velocity and stroke-measuring (Aero Electronics Co.)*, Nov., 171
weighing, hydraulic cell*, Dec., 204
Young's Modulus testing (Electro Products Inc.)*, Aug., 184
Insulation materials
electrical, Oct., 352
temperature, silica (H. I. Thompson Co.)*, Dec., 185
Insulators, high-voltage plastic (U. S. Gasket Co.)*, Jan., 166
Integrator, ball and disk (Librascope Inc.)*, July, 168
Interlock, electric, mercury switch (Winterburn Mfg. Co.)*, June, 183
Inventions, see Patents
Iron
ductile cast*, Oct., 311
ductile, in pump casing*, Sept., 147
gray, welded with nickel-base electrodes, Mar., 129
Iron, household open-handle*, Nov., 121

J

Jack, machine leveling (Enterprise Machine Parts Co.)*, July, 164
JATO engine, design of, Jan., 102
Joints
expansion (U. S. Gasket Co.)*, Jan., 162
revolving (Barco Mfg. Co.)*, May, 174
rotary, air, carbon seal (Deublin Co.)*, Nov., 160
rotary (Fawick Airflex Co.)*, Mar., 176
rotary, packless-seal (Johnson Corp.)*, Oct., 154
swing, for gasoline and oil (Barco Mfg. Co.)*, Nov., 166
swivel (Rotherm Engineering Co.)*, May, 168
Journal, with floating bearing shoes*, Feb., 190

L

Lamps
electroluminescent*, May, 114
indicator, miniature (Alden Products Co.)*, Oct., 149
pilot, neon (Industrial Devices Inc.)*, Nov., 164
slit, portable*, Mar., 127
Latches
door, adjustable (South Chester Corp.)*, Sept., 178
flush (Modern Metal Spinning & Mfg. Co.)*, Mar., 180
flush, self-closing (Hartwell Co.)*, July, 172
locking, springless (Simmons Fastener Corp.)*, Sept., 176
Lathes
controls, automatic, Apr., 206
veneer, amplidyne drive for*, May, 153
Library, organizing on engineering, Sept., 110
Lighters, automatic, for oven burners*, Sept., 118
Linkages
layout of bar, Nov., 105
straight-line motion, June, 125
Loader, automatic, for plastics press*, June, 132
Locator, workpiece, for jig borer, Mar., 113
Locks
conveyor, one-way (Stephens-Adamson Mfg. Co.)*, Jan., 158
positive splined, Jan., 115
Locomotives, railroad, types of*, Mar., 206
Lubricants, machine, Oct., 352
Lubrication
designing for*, Apr., 256
film strength*, Aug., 211
Lubricators
automatic hydraulic (Trabon Engineering Corp.)*, Aug., 177
centralized (Oil-Rite Co.)*, Jan., 166
centralized, spray (C. A. Norgren Co.)*, Feb., 182
force-feed, grease (McCord Corp.)*, June, 184

M

Machines (also see specific type)
drives and controls, Apr., 121
improved design, June, 220
new, designing, Aug., 102
performance, checking statistically, Nov., 115
reducing noise, Dec., 122
special, designing, July, 202
tools, European designs, Feb., 146
Machining, with electric spark discharge*, Nov., 104
Magnesium and alloys, Oct., 312
Management
cost control engineering, Feb., 108, Mar., 132
designing a special machine, July, 202
designing a new machine, Aug., 102
design engineering, job description, Sept., 168
developing creative ability*, Sept., 225
engineering for producibility, Aug., 133
engineering investigation via statistical techniques*, Aug., 208
evaluating engineers, June, 141
improved machine design, June, 220
industry demands on engineers, Sept., 217
organizing engineering data files, Sept., 110
patents, employee-employer rights, Sept., 121
patents, engineering groundwork, Feb., 125
patents, secrecy versus patent, Dec., 119
personal progress in engineering*, May, 212
production economy, design for, Mar., 139
rationalizing dimensions, Sept., 123
reducing manufacturing costs, Dec., 110
research collaboration, Feb., 175
selecting engineers with tests, Nov., 111
specifying standard parts, May, 106
utilization of engineers, Oct., 197
Manometer, electronic, measures small pressures*, Aug., 119
Markers, wire and cable (Actioncraft Products)*, Sept., 176
Materials (see also specific material)
alternate, NPA-listed, Oct., 362
designing with modern, Oct., 297
mechanical properties of metals, Mar., 143
properties under extreme pressure, July, 210
selection of, May, 154
shortages and conservation*, Dec., 210
Materials handling, hoppers for feeding, chuting and orienting parts, Nov., 142
Mechanisms
analysis, Russian, Sept., 127
cam profiles, July, 115
design, punched-card solutions, Sept., 148
Geneva, controls camera*, July, 126
intermittent-motion, Dec., 134
noncircular rolling cams, July, 111
producing straight-line motion, June, 125
for shock resistance, Jan., 131
transformer tap-changer, July, 133
Metallizing, vacuum, Oct., 141
Metals (see also specific type)
gear materials, selection of, Mar., 157
low-temperature, choosing, Oct., 117
mechanical properties of, Mar., 143
selection of, May, 154
Meters
capacitance (MacLeod and Hanopol Inc.)*, June, 194
nuclear radiation, design of, Feb., 118
power-factor (General Electric Co.)*, June, 194
running-time, mechanical register (R. W. Cramer Co.)*, Aug., 180
torque, strain-gage (Baldwin-Lima-Hamilton Corp.)*, Aug., 184
Micrometer, electronic (J. W. Dice Co.)*, Sept., 186
Microscope, electron*, Feb., 132
Mill, corrects spring helix pitch, July, 123
Milling machines
combination broaching*, June, 134
knee swivel, Mar., 124
tracer*, Aug., 122
Mixer, powered by dual motors*, Mar., 127
Model, gasoline-engine*, June, 117
Molding, glass-plastic laminates, Dec., 154
Molds, shell, for castings*, Dec., 238
Molybdenum, Oct., 319
Motion picture, history of, Feb., 154
Motors, atomic reactor, for aircraft, Dec., 222
Motors, electric
a-c, cushion starting of, July, 161
adjustable-speed (Star-Kimble Div.)*, Mar., 174
brake (Brown-Boveri Corp.)*, Oct., 152
designing for high production, June, 139
individual wheel drive, Jan., 99
electronically controlled (Industrial Control Co.)*, Aug., 178
explosionproof, asbestos-insulated (U. S. Electrical Motors Inc.)*, Nov., 166
explosionproof (Westinghouse Electric Corp.)*, May, 170
face-mounted, integral-horsepower (Hoover Co.)*, Nov., 168
flange-endbell (Reuland Electric Co.)*, Dec., 176
four-pole skeleton (Electric Motor Corp.)*, Feb., 180
gearmotor (Janette Mfg. Co.)*, Mar., 180
gearmotor (United Electric Machinery Co.)*, Mar., 176
gearmotor, reversing (Arco Mfg. Co.)*, Sept., 169
gear motors, right-angle (Falk Corp.)*, Jan., 160
gearmotor, twin-pinion (U. S. Electrical Motors, Inc.)*, Oct., 147
gearmotor, with disk brake (Sterling Electric Motors Inc.)*, May, 168
high-speed miniature (John Oster Mfg. Co.)*, Apr., 214
miniature (Atlas Aircraft Products Corp.)*, Oct., 156
miniature d-c (Servo-Tek Products Co.)*, Apr., 213
miniature, rabbet mount (John Oster Mfg. Co.)*, May, 178
miniature, synchronous (Allis-Chalmers Mfg. Co.)*, Dec., 174
mining (General Electric Co.)*, June, 192
resilient-base (General Electric Co.)*, Sept., 174
single-phase enclosed (General Electric Co.)*, Oct., 151
small a-c (Electro Machines Inc.)*, Jan., 167
small a-c (Cyclohm Motor Corp.)*, Feb., 178
small d-c (Lear Inc.)*, Jan., 160
split-phase (Century Electric Co.)*, Oct., 154
squirrel-cage (Fairbanks, Morse & Co.)*, Mar., 174
timing, interchangeable gear reduction*, Apr., 198
timing, synchronous (Bristol Motor Co.)*, Aug., 177
vibrator-controlled*, Mar., 188
wound-rotor (Electric Machinery Mfg. Co.)*, Mar., 181
Motor, pneumatic, rotary gear (Romec Div., Lear Inc.)*, Feb., 180
Mounting, quick-detachable, for accessories*, Aug., 106
Mountings, vibration
air-damped (Barry Corp.)*, Jan., 162, Feb., 182, Nov., 160
all-metal (Robinson Aviation Inc.)*, Oct., 152
friction-damped (Lord Mfg. Co.)*, Feb., 178

* Denotes short articles of less than one page.

N

Nameplates, plastic (Duralith Corp.)*, July, 166
Nickel alloy, high-temperature (International Nickel Co.)*, Sept., 180
Noise, reducing, in machines, Dec., 122
Notches and grooves, stress concentration at (Data Sheet), Feb., 169, Mar., 161

O

Oscillograph, laboratory (Precision Apparatus Co.)*, July, 176
Oscillating unit, moves doctor blade*, Apr., 152

P

Packings
  anticorrosive (Garlock Packing Co.)*, Mar., 173
  neoprene-fabric (Perflex Inc.)*, Sept., 174
  rings, composition (Johns-Manville)*, Oct., 148
Panel material, model (Masonite Corp.)*, Oct., 158
Pantograph, engraves cylinders*, Sept., 132
Paper
  machinery drives, Apr., 148
  photographic, intermediate (Eastman Kodak Co.)*, Oct., 158
  reproduction, translucent (Eastman Kodak Co.)*, Aug., 186
  tracing (K L H Corp.)*, Feb., 184
Patents
  employee-employer rights in, Sept., 121
  preparation and handling, Feb., 125
  secrecy versus patent, Dec., 119
Personnel, engineering
  evaluating, June, 141
  tests aid selection, Nov., 111
  what industry expects, Sept., 217
Photocopy machine (American Photocopy Equipment Co.)*, Mar., 182
Photocopying camera (Haloid Co.)*, May, 182
Piston, controls slitter knives*, Apr., 148
Plastics
  alkyd (Libbey-Owens-Ford Glass Co.)*, July, 173
  cellular, Oct., 343
  foamed phenolic resin (Rezolin Inc.)*, Oct., 149
  glass-reinforced, molding, Dec., 154
  high-temperature, Oct., 331
  imbedment of electrical assemblies, Oct., 127
  impact-strength, Oct., 337
  laminated-molded, July, 121
  laminated-phenolic, bearing surface*, June, 118
  molded laminates, Oct., 341
  molded nylon gears, Oct., 145
  molded nylon pawl*, Jan., 143
  resin-fabric laminate (Formica Co.)*, Jan., 164
Plates
  circular, calculating deflections, July, 145
  stress and deflection (Data Sheet), Sept., 163
Plating
  chromium, reverse-current*, Aug., 107
  diaphragm*, Jan., 100
Plugs, electric, spring type (Laminated Metal Products Corp.)*, Aug., 180
Pneumatics (see also specific equipment)
  air-supply systems, May, 141
  power for machine drives and controls, Apr., 175
  power system, July, 149
  standards for industrial equipment (Data Sheet), Apr., 199
Polishing, impact machine*, June, 116
Positioner, pneumatic (Conoflow Corp.)*, Apr., 208
Potentiometers
  low-torque (Electro Mec Laboratory)*, Sept., 184
  rotary-switch (G. M. Giannini Co.)*, June, 190
Powder-metals
  ferrous and friction materials, Oct., 324
  gears, Aug., 117, Oct., 146
  parts, Oct., 133
  parts, designing, Mar., 167
Power supplies
  d-c (Electronic Measurements Co.)*, Dec., 184
  d-c (Opad-Green Co.)*, Feb., 182
  hydraulic (Haskel Engineering & Supply Co.)*, Sept., 172
Presses
  hydraulic, draws cartridge cases*, Sept., 131
  printing, cylinder*, Jan., 126
  printing, eccentric bed gearing*, Jan., 124
  printing, flat bed*, Jan., 126
  printing, offset*, Jan., 130
  printing, platen*, Jan., 127
  printing, proof*, Jan., 128
  printing, redesign of, Mar., 106
  punch, moves strip continuously*, Nov., 120
Pressure
  cell, differential (Baldwin-Lima-Hamilton Corp.)*, Apr., 226
  drop, in heat exchangers, Aug., 124
  extreme, materials properties, July, 210
  measuring instrument*, Jan., 100
Printer, contact
  continuous*, June, 136
  for large drawings (Remington Rand Inc.)*, Nov., 171
Production
  cost control engineering, cost and design data, Mar., 132
  cost control, organizing for, Feb., 108
  cost, designing for lower, Mar., 139, Aug., 133, Dec., 110
  machinery, see specific type
  processes, heat treating, Oct., 98
  processes, see also specific process
Projectors
  film, magnetic recording*, Oct., 123
  opaque-object*, Dec., 133
Propellers, designed for extrusion, Nov., 139
Proportionalizer, mechanical (Hagan Corp.)*, Feb., 176
Pulley, variable-speed (Gerbing Mfg. Co.)*, July, 166
Pumps
  casings, centrifugal, layout, Aug., 129
  centrifugal, circulating (Taco Heaters Inc.)*, May, 174
  centrifugal, close-coupled (Economy Pumps Inc.)*, Dec., 178
  centrifugal, with motor (Taco Heaters Inc.)*, Mar., 178
  diaphragm, variable-stroke*, Sept., 120
  efficiency, venturi booster improves*, Mar., 156
  fluid, with counterbalanced vanes*, Feb., 190
  fuel, scavenge (Lear Inc.)*, Sept., 182
  high-head (Economy Pumps Inc.)*, July, 163
  hydraulic, on homogenizer*, Oct., 124
  hydraulic power (Oilgear Co.)*, Aug., 178
  hydraulic, produces drag on crown roll*, Apr., 150
  hydraulic, reversible-gear (Eco Engineering Co.)*, May, 168
  hydraulic, rotary-gear (John S. Barnes Corp.)*, June, 183
  hydraulic, triplex (Kobe Inc.)*, Dec., 184
  hydraulic, variable-discharge*, Jan., 174
  metering, stainless-steel (Mechanical Products Corp.)*, Sept., 174
  piston-diaphragm*, Mar., 112
  rotary-gear (Warren Steam Pump Co.)*, May, 172
  screw, external gear (Sier-Bath Gear & Pump Co.)*, May 170
  vacuum (F. J. Stokes Machine Co.)*, Sept., 172
  vacuum, belt-driven (Kinney Mfg. Co.)*, June, 190
  vane, designing, Apr., 157
Punched cards
  indexing engineering data with, Sept., 110
  mechanism design with, Sept., 148
Pushbuttons, aircraft (Square D Co.)*, Oct., 154

R

Rack and gear mechanisms, in adding machines, June, 110
Radioactive materials, evaluate tire wear*, Nov., 102
Railroad switchcar, gasoline-powered, Mar., 142
Ramps, aircraft loading, design of, July, 100
Recorders
  electronic (Bristol Co.)*, Feb., 185
  mechanical (Streeter-Amet Co.)*, Mar., 182
  null balance servo (Minneapolis-Honeywell Regulator Co.)*, July, 176
  oscillograph, high-speed (Offner Electronics Inc.)*, Aug., 186
  running-time (Bristol Co.)*, Oct., 152
  strain (Baldwin-Lima-Hamilton Corp.)*, Mar., 183
  stress-strain (Baldwin-Lima-Hamilton Corp.)*, June, 194
  timing, differential*, Apr., 196
Rectifiers
  selenium, Apr., 163
  selenium (Syntron Co.)*, Nov., 168
Reducers, speed
  double-reduction (Westinghouse Electric Co.)*, June, 182
  (Falk Corp.)*, Jan., 167
  friction-drive*, Feb., 190
  right-angle (Michigan Tool Co.)*, Feb., 182, Mar., 180
  shaft (American Pulley Co.)*, July, 170
  worm and gear design for, (Data Sheet), Aug., 157
Resistor, variable, volume control (Clarostat Mfg. Co.)*, June, 190
Relays
  circuits, three-relay, design, Feb., 121
  delayed reset (A. W. Haydon Co.)*, Nov., 164
  electronic, laboratory (Emil Greiner Co.)*, Dec., 186
  electronic, sensitive (Farmer Eelctric Co.)*, Oct., 150
  midget (Essex Wire Corp.)*, Sept., 176
  miniature d-c (Struthers-Dunn Inc.)*, May, 170
  miniature telephone type (Potter-Brumfield)*, Jan., 158
  packaging-control (Potter & Brumfield)*, Mar., 178
  plate circuit (Potter & Brumfield)*, Apr., 223
  plunger, mercury-contact (Ebert Electronics Co.)*, June, 183
  power (Ward Leonard Electric Co.)*, Apr., 213
  precision-switch (Square D Co.)*, Sept., 184
  small telephone type (C. P. Clare & Co.)*, Oct., 148
  subminiature, hermetically sealed (Allied Control Co.)*, Sept., 170
  time-delay, hermetically sealed (R. W. Cramer Co. Inc.)*, Nov., 162
  time-delay, hydraulic (Heinemann Electric Co.)*, Oct., 152
  time-delay, reset (R. W. Cramer Co.)*, July, 166
  timing, pneumatic (Square D Co.)*, June, 184
  timing, selection and application, Apr., 131
Relief, tooth, gear, Sept., 143
Reproduction machine (Charles Bruning Co.)*, Apr., 226
Research, see Management, specific types of equipment
Resistor, wire, open-coil (Mullenbach Electrical Mfg. Co.)*, July, 168
Rheostats, power, ribbon-wire (P. R. Mallory & Co.)*, Sept., 170
Rings
  brazing (Lucas-Milhaupt Engineering Co.)*, July, 163
  piston (Double Seal Ring Co.)*, Jan., 158
  slip, miniature (Electro Tec Corp.)*, Dec., 182
Riveter, with four-second cycle time*, May, 135
Rocket engine (JATO), design of, Jan., 102
Rods, push-pull, and torque tubes, Apr., 143
Roll, self-adjusting, for moving material*, Apr., 152
Rotors
  balanced, measuring moment of inertia, Nov., 127
  gas-turbine, vibration failures, Dec., 157
  helicopter, drives for, Apr., 185
  turbine blade fastenings, Feb., 148
Rubber
  fabric laminate, foam latex (Andrews-Alderfer Processing Co.)*, July, 175
  silicone, Oct., 347
  synthetic, Oct., 345

* Denotes short articles of less than one page.

synthetic, parts (Stalwart Rubber Co.)*, Jan., 158
Thiokol, Oct., 346

S

Sanders
adjustable-spindle*, Dec., 132
pneumatic, counterbalanced*, Sept., 128
Saw, band*, Dec., 132
Scanner, photo, controls stencil cutter*, Mar., 128
Screwdriver, with overload release*, July, 127
Seals
bearing, with outboard flange*, Mar., 188
O-ring, silicone-rubber (Frederick S. Bacon Laboratories)*, July, 168
O-ring, synthetic (Parker Appliance Co.)*, Sept., 180
packing, cylinder rod (Hydraulic Accessories Co.)*, May, 180
shaft, for abrasive-fluid mixtures, June, 128
shaft, mechanical (Crane Packing Co.)*, June, 188
shaft, mechanical (Sealol Corp.)*, Feb., 183
Servo system, hydraulic, proportionalizing dither, Aug., 125
Shafts
drive, floating*, June, 212
flexible, assembly (Kupfrian Mfg. Co.)*, May, 168
flexible, for power transmission, May, 126
redesigned to use welding, May, 147
Shaver, gear, large*, Sept., 131
Shock
evaluating tests, Dec., 150
resistance, designing for, Jan., 131
Shot peening gears, for fatigue resistance, June, 178
Sleeve, accordion (A & A Mfg. Co.)*, Aug., 183
Slitter, waxed-paper*, Apr., 147
Sockets, tube, miniature (U. S. Gasket Co.)*, July, 164
Solenoids
cushioned-impact (National Acme Co.)*, Dec., 173
guided armature (Practical Electric Co.)*, June, 188
Specifications, for standard parts, May, 106
Spindles, swaging tapered bobbin*, Jan., 144
Splines
on propellor lock, Jan., 115
taper involute, design of, Jan., 117
Spool, winding, wire, collapsible*, Nov., 186
Springs
Belleville, load and deflection of, Nov., 154
computer, slide-rule (American Hydromath Co.)*, Nov., 172
helical, working stresses, Nov., 135
helix pitch corrected by mill, July, 123
prestressed, Jan., 141
wave, designing, July, 109
Spun parts, eliminate multiple staging dies*, Apr., 198
Stampings
lamination, for motor, June, 139
switch mechanisms, Feb., 137
tractor parts, July, 136
Stapler, ring, magazine-fed*, Nov., 122
Starters, air-motor (Ingersoll-Rand Co.)*, Sept., 170
Starters, motor
a-c (Clark Controller Co.)*, July, 166
explosionproof (Arrow-Hart & Hegeman Electric Co.)*, Sept., 178
in-between-size (Furnas Electric Co.)*, Oct., 150
magnetic, nonreversing (Euclid Electric & Mfg. Co.)*, Sept., 172
manual, fractional hp (Square D Co.)*, July, 172
overcenter toggle (Westinghouse Electric Co.)*, Mar., 176
part-winding (Allen-Bradley Co.)*, Sept., 182
Statistical analysis
in engineering tests*, Aug., 208
checks machine performance, Nov., 115
Steel
alloy, hot workability*, July, 119
drill-rod, hardened (Ace Drill Corp.)*, Dec., 180
castings, welded design, Oct., 137
electrical, Oct., 309
electrical (Armco Steel Corp.)*, July, 175
for low-temperature service, Oct., 117
gear, selection of, Mar., 157
heat and corrosion-resistant, Oct., 301
heat-treating, Oct., 98
new and alternate, Oct., 298
selection of, May, 154
silver-coated (American Silver Co.)*, Sept., 185
Steering mechanism, hydraulic for cars*, Apr., 191
Standards
length, atomic*, June, 116
materials, specifying organizations, Oct., 354
parts, specifying, May, 106
pivoted shoe thrust bearings, May, 150
surface finish, May, 137
Stress
automotive parts, June, 233
concentration, design factors in (Data Sheet), Feb., 169, Mar., 161, May, 159, June, 173, July, 155
concentration, flat bars, multiple notches (Data Sheet), Dec., 165
and deflection, in plates (Data Sheet), Sept., 163
strain properties of metals, Mar., 143
surface compressive, in gear teeth (Data Sheet), Dec., 163
Strip
brass, with contact inserts (D. E. Makepeace Co.)*, Dec., 182
enamel-coated (Coated Coil Corp.)*, Dec., 174
Styling, to improve appearance, Mar., 152
Surface finish standards, May, 137
Swaging, tapered bobbin spindles*, Jan., 144
Switches
air-flow, vane (Henry G. Dietz Co.)*, Sept., 169
foot-operated (Simonds Machine Co.)*, Apr., 222
ganged precision (W. L. Maxson Corp.)*, Aug., 182
heavy duty (Russell & Stoll Co. Inc.)*, Feb., 183
key-operated (Square D Co.)*, Dec., 174
limit, direct-action (General Control Co.)*, Oct., 154
limit (Exhibit Supply Co.)*, Jan., 164
maintained-position (General Control Co.)*, Dec., 173
master, six-point (General Electric Co.)*, Dec., 180
mechanism, stamped, Feb., 137
precision, magnetic blowout (Micro Switch Div.)*, Nov., 182
precision, snap-action (Micro Switch Div.)*, Oct., 151
pressure-actuated (Acro Mfg. Co.)*, Sept., 184
pressure-actuated (F. W. Dwyer Mfg. Co.)*, July, 172
pressure, miniature (Cook Electric Co.)*, June, 186
selector, rotary wafer (Leeds & Northrop)*, Mar., 173
snap-action, coil-spring (Cherry-Channer Corp.)*, Nov., 166
snap-action, d-c (Mu-Switch Div.)*, Oct., 147
time-delay (Pneu-trol Devices Inc.)*, Mar., 178
treadle, foot (Simonds Machine Co.)*, Aug., 174

T

Tables, drafting
all-wood (Kingsley Mfg. Co.)*, Nov., 172
steel (Emrick Inc.)*, Dec., 186
steel (Stacor Equipment Corp.)*, Aug., 185
Table, shockproof, designing a, Nov., 134
Tachograph, portable (O. Zernickow Co.)*, Aug., 186
Tachometers
electric (Reeves Pulley Co.)*, July, 163
hand (Equipoise Controls Inc.)*, Feb., 184
hand, pendulum (James G. Biddle Co.)*, Oct., 158
stroboscopic (Electronic Measurments Co.)*, Mar., 182
three-range (Metron Instrument Co.)*, June, 184
Tap-drill size, nomograms for selection (Data Sheet), Nov., 149
Tape, electrical, plastic (B. F. Goodrich Co.)*, Sept., 180
Tappet, hydraulic, self-contained*, July, 194
Telephone, stamped circuit for*, May, 132
Television, for remote observation*, June, 117
Temperature
rise, in electronic equipment, Feb., 174
sensing device, testing*, Aug., 112
Tensiometer, portable, coil-spring*, Aug., 195
Tension, wire, device*, May, 198
Terminals
insulated solderless (Thomas & Betts Co.)*, Aug., 182
wire, solderless (Buchanan Electrical Products Corp.)*, May, 181
Testing, see Management, specific types of equipment
Testing desk, magnetic-material*, Dec., 133
Testing machines
universal*, Oct., 116
universal, table-model*, Mar. 125
Textile machinery drives, Apr., 148
Thermocouples
gland (Conax Sales Co.)*, July, 164
measure airstream velocity*, Oct., 110
Thermometers, resistance, bonded (Ruge-de Forest Inc.)*, Dec., 186
Thermostats
bimetal, snap-action (Stevens Mfg. Co.)*, July, 170
expanding tube (Smith Control & Instrument Corp.)*, Aug., 172
hermetically sealed (Spencer Thermostat Div.)*, June, 192
hermetically sealed (Stevens Mfg. Co.)*, Dec., 174
immersion (Spencer Thermostat Div.)*, Aug., 174
Time marker, oscilloscope (Berkshire Laboratories)*, Sept., 186
Timers
delay, electronic (G. C. Wilson & Co.)*, May, 178
electric switch (Automatic Temperature Control Co.)*, Jan., 166
electronic (Farmer Electric Co.)*, Apr., 216
pneumatic (Mead Specialties Co.)*, Mar., 176
recycling (Industrial Timer Corp.)*, July, 174
short-interval (Photoswitch Inc.)*, Aug., 178
synchronous motor (General Control Co.)*, May, 180
Titanium and alloys, Oct., 318
Titanium carbide, Oct., 324
Tolerances
angular displacement, on shafts, Sept., 155
determining practical, Mar., 121
in production machines, Aug., 149
Tool, pattern, for pattern drawing from mockup*, Mar., 111
Tooling, simplified, for sheet-metal, Sept., 153
Torque converters
applied to cranes, June, 119, July, 138, Aug., 113
Ford-Mercury, Feb., 163
piston type*, Dec., 203
Torque measurements, eliminating friction, Dec., 161
Tractors
for earth-moving equipment, Jan., 99
materials-handling, grip coupling, Dec., 130
parts redesigned for economy, July, 135
Transformer tap-changing mechanism, July, 133
Transmissions (see also Drives)
differential*, Apr., 244
magnetic (Vickers Inc.)*, Mar., 174
planetary*, Apr., 246
planetary gear*, Dec., 206
reversible, servomotor*, June, 214
reversing*, Feb., 116
reversing (Vickers Inc.)*, Feb., 176
timer, packaged (Telechron Inc.)*, June, 192
torque converter, Ford-Mercury, Feb., 163
variable-speed*, Feb., 117
variable-speed, induction-motor (Graham Transmissions Inc.)*, Apr., 214
variable-speed, miniature (Metron Instrument Co.)*, Apr., 219, Oct., 148
variable-speed, for production winding, Apr., 153
variable-speed (Speed Selector Inc.)*, Sept., 170

* Denotes short articles of less than one page.

variable-speed (Worthington Pump & Machinery Co.)*, Jan., 157
Trucks
hand, gasoline-powered, Apr., 141
lift, diesel-powered*, July, 125
Tubes, torque, and push-pull rods, Apr., 143
Tubing (see also Hose)
electrical, coated (Republic Steel Corp.)*, Sept., 174
plastic, electric (Resistoflex Corp.)*, Nov., 164
seamless, large (Tube Reducing Corp.)*, June, 183
steel (Carpenter Steel Co.)*, Apr., 225
Tungsten and alloys, Oct., 322
Tunnel, wind
hypersonic*, Nov., 148
supersonic*, Oct., 137
Turbines
blade fastenings, Feb., 148
generators, hydrogen cooled*, Dec., 115
powers aircraft accessories*, Oct., 125
for tankers*, May, 112
Turbosupercharger, eliminates gearing*, Sept., 152
Typewriters
automatic justifying*, Jan., 129
identifies electrical tubing*, Nov., 119
justifying*, Jan., 124
rules form lines*, Jan., 123

U

Universal joint (Curtis Universal Joint Co. Inc.)*, Jan., 165, Feb., 180
Unloader, boxcar*, Feb., 134

V

Valves
ball*, May, 115
check (Crane Co.)*, Jan., 160
gate, double-disk*, July, 107
gate, forged-steel (R-P & C Valve Div.)*, Dec., 176
relief (R-S Products Corp.)*, Jan., 164
rubber-sleeve, for materials handling*, Mar., 112
sleeve, combustion-engine*, Oct., 176
solenoid, three-way (A. F. Hoope Engineering Inc.)*, Nov., 166
two-way midget (Automatic Switch Co.)*, Jan., 157
Valves, hydraulic
check (Greer Hydraulics Inc.)*, Apr., 208
control (Parker Electric Co.)*, Jan., 160
control (Ledeen Mfg. Co.)*, Feb., 182
control, double-lever (American Industries Co.)*, Dec., 173
control hydraulic dampers, Aug., 109
hydraulic, cylinder-control (Wisler Eng. & Machine Co.)*, Dec., 178
diaphragm*, June, 212
double range (Rivett Lathe and Grinder Inc.)*, Feb., 180
flow-control (Adel Div., GM Corp.)*, Apr., 216
four-way (Barksdale Valves)*, Mar., 181
manual flow-control (Adel Div., GM Corp.)*, May, 181
pilot-operated (Denison Engineering Co.)*, Oct., 150
pressure-balancing*, June, 214
pressure control (Parker Appliance Co.)*, May, 176
hydraulic, pressure-reducing*, Dec., 203
pressure-reducing (Hydraulic Equipment Co.)*, Jan., 162
regulating, power-cylinder (Hydraulic Equipment Co.)*, Nov., 159
regulating (Reynolds Shaffer Co.)*, Apr., 222
servo control (Hydraulic Control Co.)*, Apr., 213
shut-off (Airmatic Valve Inc.)*, Apr., 219
solenoid*, June, 216
solenoid (Automatic Switch Co.)*, Sept., 178
surge*, July, 108
surge-damping (Denison Engineering Co.)*, Aug., 177
Valves, pneumatic
check (Bobrick Mfg. Co.)*, Oct., 156
control (Valvair Corp.)*, Jan., 166
foot-operated (C. B. Hunt & Son)*, Aug., 172
interchangeable control (Mechanical Air Controls Sales Co.)*, Nov., 166
in power systems, July, 149
relief, pancake type (Andrews-Alderfer Processing Co.)*, Nov., 160
Vending machine coin controls, Feb., 141
Venturi booster, increases pump efficiency*, Mar., 156
Vibration
evaluating shock tests, Dec., 150
failures, gas-turbine buckets, Dec., 157
Vibrators
air-cushioned (Cannon Vibrator Co.)*, Dec., 180
hopper (Syntron Co.)*, Apr., 224
Voltmeter, recording (Bristol Co.)*, Aug., 186

W

Washer, wave, designing, July, 109
Wear-resistance, increasing by hardfacing, Mar., 114
Welder, manual, portable*, July, 128
Welding
cast-weld design, Oct., 137
gray-iron with nickel-base electrodes, Mar., 129
motor generator shaft redesigned to use, May, 147
tractor parts redesigned for, July, 135
Wheels
hand, selecting, and manual controls, Nov., 123
solid-rubber tread (Aerol Co. Inc.)*, Mar., 178
Whiteprinter continuous automatic*, June, 136
Winches, logging, controls for, Apr., 193
Winding, production, using variable-speed drives, Apr., 153
Windows, plate glass (Swift Lubricator Co.)*, June, 193
Wire
gasoline-resistant (General Electric Co.)*, Jan., 160
steel, copper-plated (Kenmore Metals Corp.)*, Dec., 185
Wrapping machine, redesigned for higher speed, Apr., 123

Z

Zinc plate treatment (Allied Research Products Inc.)*, Mar., 174

* Denotes short articles of less than one page.